

WHAT IS CLAIMED IS:

1. A communications system, comprising:
a mobile unit operable to transmit content;
a plurality of base transceiver stations, each base transceiver station operable
5 to:
receive the content from the mobile unit;
determine a value for a metric associated with communications
between the mobile unit and the base transceiver station;
generate a graded packet including the value and the content; and
10 communicate the graded packet; and
a router operable to:
receive redundant graded packets generated at the base transceiver
stations;
combine different portions of the content from each of two or more of
15 the graded packets to create an improved packet, the different portions from the
graded packets collectively representing the entirety of the content such that the
improved packet includes the entirety of the content; and
communicate the improved packet.
- 20 2. The system of Claim 1, wherein the router is further operable to:
determine that portions of the content in two or more of the graded packets
include errors created during communication of the content; and
combine different errorless portions of the content from each of two or more
graded packets to create the improved packet, the content of the improved packet
25 having fewer errors than the content included in the graded packets.
3. The system of Claim 1, wherein the router is further operable to:
evaluate each corresponding bit in two or more graded packets;
estimate the correct value of each bit based on the evaluation; and
30 generate an improved packet including the estimated correct value for each bit.

4. The system of Claim 3, wherein evaluating each corresponding bit comprises performing an exclusive-or operation on the corresponding bits.

5. The system of Claim 1, wherein the router is further operable to:
5 select two or more of the graded packets based on the value included in each graded packet; and
combine different portions of the content from two or more of the selected packets to create the improved packet.

10 6. The system of Claim 1, wherein the mobile unit is operable to transmit a packet that includes the content.

7. The system of Claim 1, wherein the content comprises voice content received from a user of the mobile unit.

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8. A network device, comprising:

an interface operable to receive a plurality of redundant graded packets from a plurality of base transceiver stations, wherein the graded packets include a content received from a mobile unit and a value for a metric generated by each base transceiver station, the metric associated with communications between the mobile unit and the base transceiver station; and

a processor operable to combine different portions of the content from each of two or more of the graded packets to create an improved packet, the different portions from the graded packets collectively representing the entirety of the content such that the improved packet includes the entirety of the content.

9. The network device of Claim 8, wherein the processor is further operable to:

determine that portions of the content in two or more of the graded packets include errors created during communication of the content; and

combine different errorless portions of the content from each of two or more graded packets to create the improved packet, the content of the improved packet having fewer errors than the content included in the graded packets.

10. The network device of Claim 8, wherein the processor is further operable to:

evaluate each corresponding bit in two or more graded packets;

estimate the correct value of each bit based on the evaluation; and

generate an improved packet including the estimated correct value for each bit.

11. The network device of Claim 10, wherein evaluating each corresponding bit comprises performing an exclusive-or operation on the corresponding bits.

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14. A method of creating an improved packet, comprising:

5 receiving a plurality of redundant graded packets from a plurality of base transceiver stations, wherein the graded packets include a content received from a mobile unit and a value for a metric generated by each base transceiver station, the metric associated with communications between the mobile unit and the base transceiver station; and

10 combining different portions of the content from each of two or more of the graded packets to create an improved packet, the different portions from the graded packets collectively representing the entirety of the content such that the improved packet includes the entirety of the content.

15 15. The method of Claim 14, further comprising:

determining that portions of the content in two or more of the graded packets include errors created during communication of the content; and

15 combining different errorless portions of the content from each of two or more graded packets to create the improved packet, the content of the improved packet having fewer errors than the content included in the graded packets.

20 16. The method of Claim 14, further comprising:

evaluating each corresponding bit in two or more graded packets;

estimating the correct value of each bit based on the evaluation; and

generating an improved packet including the estimated correct value for each bit.

25 17. The method of Claim 16, wherein evaluating each corresponding bit comprises performing an exclusive-or operation on the corresponding bits.

selecting two or more of the graded packets based on the value included in each graded packet; and

19. The method of Claim 14, wherein the content comprises voice content received from a user of the mobile unit.

19. The method of Claim 14, wherein the content comprises voice content

20. Software for creating an improved packet, the software embodied in a computer-readable medium and operable to:

receive a plurality of redundant graded packets from a plurality of base transceiver stations, wherein the graded packets include a content received from a mobile unit and a value for a metric generated by each base transceiver station, the metric associated with communications between the mobile unit and the base transceiver station; and

combine different portions of the content from each of two or more of the graded packets to create an improved packet, the different portions from the graded packets collectively representing the entirety of the content such that the improved packet includes the entirety of the content.

21. The software of Claim 20, further operable to:

determine that portions of the content in two or more of the graded packets include errors created during communication of the content; and

combine different errorless portions of the content from each of two or more graded packets to create the improved packet, the content of the improved packet having fewer errors than the content included in the graded packets.

22. The software of Claim 20, further operable to:

evaluate each corresponding bit in two or more graded packets;

estimate the correct value of each bit based on the evaluation; and

generate an improved packet including the estimated correct value for each bit.

23. The software of Claim 22, wherein evaluating each corresponding bit comprises performing an exclusive-or operation on the corresponding bits.

25. The software of Claim 20, wherein the content comprises voice content received from a user of the mobile unit.

Year	Country	Population (millions)	Urban population (millions)	Urban population (%)	Urban population (millions)	Urban population (%)	Urban population (millions)	Urban population (%)
1950	USA	150	75	50	75	50	75	50
1960	USA	170	85	50	85	50	85	50
1970	USA	190	95	50	95	50	95	50
1980	USA	210	105	50	105	50	105	50
1990	USA	230	115	50	115	50	115	50
2000	USA	250	125	50	125	50	125	50
2010	USA	270	135	50	135	50	135	50
2020	USA	290	145	50	145	50	145	50
2030	USA	310	155	50	155	50	155	50
2040	USA	330	165	50	165	50	165	50
2050	USA	350	175	50	175	50	175	50
2060	USA	370	185	50	185	50	185	50
2070	USA	390	195	50	195	50	195	50
2080	USA	410	205	50	205	50	205	50
2090	USA	430	215	50	215	50	215	50
2100	USA	450	225	50	225	50	225	50

26. A network device, comprising:

means for receiving a plurality of redundant graded packets from a plurality of base transceiver stations, wherein the graded packets include a content received from a mobile unit and a value for a metric generated by each base transceiver station, the metric associated with communications between the mobile unit and the base transceiver station; and

means for combining different portions of the content from each of two or more of the graded packets to create an improved packet, the different portions from the graded packets collectively representing the entirety of the content such that the improved packet includes the entirety of the content.

27. The network device of Claim 26, further comprising:

means for determining that portions of the content in two or more of the graded packets include errors created during communication of the content; and

means for combining different errorless portions of the content from each of two or more graded packets to create the improved packet, the content of the improved packet having fewer errors than the content included in the graded packets.

28. The network device of Claim 26, further comprising:

means for evaluating each corresponding bit in two or more graded packets;

means for estimating the correct value of each bit based on the evaluation; and

means for generating an improved packet including the estimated correct value for each bit.

29. The network device of Claim 28, wherein evaluating each corresponding bit comprises performing an exclusive-or operation on the corresponding bits.

means for selecting two or more of the graded packets based on the value included in each graded packet; and

31. The network device of Claim 26, wherein the content comprises voice content received from a user of the mobile unit.

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32. A communications system, comprising:

a first mobile unit operable to transmit a first content;

a second mobile unit operable to transmit a second content;

a plurality of base transceiver stations, each base transceiver station operable

5 to:

receive the content from at least one of the mobile units;

determine a value for a metric associated with communications
between the mobile unit and the base transceiver station;

generate a graded packet including the value and the content; and

10 communicate the graded packet; and

one or more routers collectively operable to:

receive a plurality of first graded packets including the first content
and a plurality of second graded packets including the second content;

15 select one of the first graded packets based on the values included in
the first graded packets;

select one of the second graded packets based on the values included in
the second graded packets;

20 mix the first content of the selected first graded packet and the second
content of the selected second graded packet to create a mixed packet including the
first and second contents; and

communicate the mixed packet.

33. The system of Claim 32, wherein the selecting steps and the mixing
step are performed by a single router.

25 34. The system of Claim 32, wherein the selecting steps and the mixing
step are performed by multiple routers.

35. The system of Claim 32, wherein the one or more routers comprise:
a first router operable to:

receive the plurality of first graded packets and the plurality of second
graded packets;

5 select one of the first graded packets based on the values included in
the first graded packets;

select one of the second graded packets based on the values included in
the second graded packets; and

communicate the selected packets; and

10 a second router operable to:

receive the selected packets;

mix the first content of the selected first graded packet and the second
content of the selected second graded packet to create a mixed packet including the
first and second contents; and

15 communicate the mixed packet.

36. The system of Claim 32, further comprising:

a third mobile unit operable to transmit a third content to a plurality of the
base transceiver stations; and

20 an additional router operable to:

receive a plurality of third graded packets including the third content;

select one of the third graded packets based on the values included in
the third graded packets;

receive a first mixed packet including the first and second content;

25 mix the third content of the selected third graded packet and the first
and second content to create a second mixed packet including the first, second, and
third contents; and

communicate the second mixed packet.

37. The system of Claim 32, wherein:

the first mobile unit is operable to transmit a packet that includes the first content; and

the second mobile unit is operable to transmit a packet that includes the second content.

38. The system of Claim 32, wherein:

the first content comprises voice content received from a user of the first mobile unit;

the second content comprises voice content received from a user of the second mobile unit; and

the first and second mobile units are participating in a conference call.

39. A network device, comprising:
an interface operable to:

receive a plurality of first graded packets from two or more of a plurality of base transceiver stations, wherein the first graded packets include a first content received from a first mobile unit and a value for a metric generated by each base transceiver station, the metric associated with communications between the first mobile unit and the base transceiver station;

receive a plurality of second graded packets from two or more of the plurality of base transceiver stations, wherein the second graded packets include a second content received from a second mobile unit and a value for a metric generated by each base transceiver station, the metric associated with communications between the second mobile unit and the base transceiver station;

a processor operable to:

select one of the first graded packets based on the values included in the first graded packets;

select one of the second graded packets based on the values included in the second graded packets;

mix the first content of the selected first graded packet and the second content of the selected second graded packet to create a mixed packet including the first and second contents; and

communicate the mixed packet.

40. The network device of Claim 39, wherein:

the first content comprises voice content received from a user of the first mobile unit;

the second content comprises voice content received from a user of the second mobile unit; and

the first and second mobile units are participating in a conference call.

41. A method for mixing packets, comprising:

receiving a plurality of first graded packets from two or more of a plurality of base transceiver stations, wherein the first graded packets include a first content received from a first mobile unit and a value for a metric generated by each base transceiver station, the metric associated with communications between the first mobile unit and the base transceiver station;

receiving a plurality of second graded packets from two or more of the plurality of base transceiver stations, wherein the second graded packets include a second content received from a second mobile unit and a value for a metric generated by each base transceiver station, the metric associated with communications between the second mobile unit and the base transceiver station;

selecting one of the first graded packets based on the values included in the first graded packets;

selecting one of the second graded packets based on the values included in the second graded packets;

mixing the first content of the selected first graded packet and the second content of the selected second graded packet to create a mixed packet including the first and second contents; and

communicating the mixed packet.

42. The method of Claim 41, wherein:

the first content comprises voice content received from a user of the first mobile unit;

the second content comprises voice content received from a user of the second mobile unit; and

the first and second mobile units are participating in a conference call.

43. Software for mixing packets, the software embodied in a computer-readable medium and operable to:

5 receive a plurality of first graded packets from two or more of a plurality of base transceiver stations, wherein the first graded packets include a first content received from a first mobile unit and a value for a metric generated by each base transceiver station, the metric associated with communications between the first mobile unit and the base transceiver station;

10 receive a plurality of second graded packets from two or more of the plurality of base transceiver stations, wherein the second graded packets include a second content received from a second mobile unit and a value for a metric generated by each base transceiver station, the metric associated with communications between the second mobile unit and the base transceiver station;

15 select one of the first graded packets based on the values included in the first graded packets;

20 select one of the second graded packets based on the values included in the second graded packets;

mix the first content of the selected first graded packet and the second content of the selected second graded packet to create a mixed packet including the first and second contents; and

communicate the mixed packet.

44. The software of Claim 43, wherein:

25 the first content comprises voice content received from a user of the first mobile unit;

the second content comprises voice content received from a user of the second mobile unit; and

the first and second mobile units are participating in a conference call.

45. A network device, comprising:

means for receiving a plurality of first graded packets from two or more of a plurality of base transceiver stations, wherein the first graded packets include a first content received from a first mobile unit and a value for a metric generated by each base transceiver station, the metric associated with communications between the first mobile unit and the base transceiver station;

means for receiving a plurality of second graded packets from two or more of the plurality of base transceiver stations, wherein the second graded packets include a second content received from a second mobile unit and a value for a metric generated by each base transceiver station, the metric associated with communications between the second mobile unit and the base transceiver station;

means for selecting one of the first graded packets based on the values included in the first graded packets;

means for selecting one of the second graded packets based on the values included in the second graded packets;

means for mixing the first content of the selected first graded packet and the second content of the selected second graded packet to create a mixed packet including the first and second contents; and

means for communicating the mixed packet.

46. The network device of Claim 45, wherein:

the first content comprises voice content received from a user of the first mobile unit;

the second content comprises voice content received from a user of the second mobile unit; and

the first and second mobile units are participating in a conference call.